

Venturer™

GIROD STRUCTURAL EPOXY SYSTEM

Structural Epoxy for Glued-In Rod Connections in Timber

Product code	VEP-GIROD-450
Product type	Two-component structural epoxy adhesive paste (Part A: Resin + Part B: Hardener)
Cartridge size	450 ml coaxial dual-cartridge (HDPE)
Recommended use	Glued-in rod (GIROD) connections in glulam and engineered timber
SDS reference	VEP-GIROD SDS v1.0, 14 March 2026 (GHS Rev.7 / ISO 11014:2009)

PRODUCT DESCRIPTION

Venturer GIROD is a two-component, modified epoxy paste engineered for structural glued-in rod (GIR) connections in mass timber, glulam, and hybrid timber-steel assemblies. It is supplied in a 450 ml coaxial dual-cartridge with static mixing nozzle, providing consistent, site-ready application with zero mixing errors.

The thixotropic, non-sag formulation allows use in vertical and overhead orientations. Available in Standard and Slow-Set variants to suit different site conditions and working time requirements.

Developed under the Venturer structural resin platform by Nautilus Innovation and manufactured by Epoxy Industries (Pvt) Ltd, Karachi.

APPLICATIONS

- Glued-in rod connections in hardwood and softwood glulam
- Structural timber connections and reinforcement
- Timber-steel hybrid joints (project-specific design)
- Moment connections in engineered timber frames
- Resort, architectural, and marine-exposed timber structures
- Factory pre-assembly and on-site installation workflows

TECHNICAL PROPERTIES — CURED RESIN

Property	Value	Source
Chemistry	Modified epoxy (two-component)	Manufacturer TDS
Mix ratio	1 : 1 by volume (Part A : Part B)	SDS Section 9
Compressive strength	≥ 60 MPa	Manufacturer TDS
Flexural strength (bending)	≥ 50 MPa	Manufacturer TDS
Tensile strength (splitting)	≥ 8.5 MPa	Manufacturer TDS
Density (cured, typical)	1.4 – 1.6 g/cm ³	SDS Section 9
Sag (vertical mobility)	≤ 2.0 mm at 25°C	Manufacturer TDS
Physical state	Thixotropic paste (non-sag)	SDS Section 9
Appearance	Part A: grey/beige paste. Part B: white paste	SDS Section 9

Solubility in water	Negligible / insoluble	SDS Section 9
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CURE SCHEDULE

Two variants are available:

Variant	Pot Life (25°C)	Full Cure	Typical use
Standard	20 minutes	2.5 hours	Factory assembly, fast turnaround
Slow-Set	60 minutes	8 hours	On-site work, complex assemblies

Note: Cure times are measured at 25°C. Times will be shorter at higher ambient temperatures and longer at lower temperatures. Do not load the connection until full cure is confirmed.

TEST EVIDENCE

Independent pull-out testing conducted by Setsco Services Pte Ltd (Singapore), an accredited testing laboratory:

Parameter	Result
Test laboratory	Setsco Services Pte Ltd, Singapore
Report reference	MM-8500401887
Product tested	VEP E300 — timber pull-out configuration
Pull-out load achieved	~125 kN (approaching steel yield strength of test rod)
Failure mode	Steel yield — bond intact

This is generic benchmarking data. Project-specific testing and validation remains the responsibility of the specifying engineer and/or the timber manufacturer.

APPLICATION GUIDE

1. Drill hole to specified diameter and depth per connection design.

Clean hole thoroughly — brush and blow with compressed air, repeat three times. Remove all dust, chips, and debris.

2. Prepare cartridge.

Insert 450 ml dual cartridge into dispensing gun. Attach static mixing nozzle. Purge initial material to waste until both components are flowing evenly through the mixer.

3. Fill hole.

Inject resin from the base of the hole upwards, filling to approximately two-thirds depth. Avoid trapping air pockets.

4. Insert rod.

Push threaded rod or rebar into the hole with a slow rotating motion. Excess resin should be displaced to the surface, confirming full encapsulation.

5. Hold and cure.

Hold rod in position until initial set. Allow to cure undisturbed for the full cure period before loading.

PACKAGING

Item	Detail
Cartridge format	450 ml coaxial dual-cartridge (HDPE). Part A and Part B physically separated.
Carton	6 cartridges per carton. Plain brown carton with internal dividers.
Carton labelling	Side sticker 150×120 mm + Top sticker 100×60 mm. Matte finish.
Cartridge labelling	Venturer™ GIROD branded label (150×120 mm) with batch number, date, QR code
Dispensing gun	Standard manual or pneumatic caulking gun (available separately)
Static mixing nozzles	Included with each cartridge

STORAGE AND HANDLING

- Store in original sealed cartridges in a cool, dry place below 40°C.
- Protect from direct sunlight, heat sources, and oxidising agents.
- Shelf life: 24 months from date of manufacture (unopened, stored as directed).
- Components do not react during storage or transport — they are physically separated in the cartridge.
- Do not use cartridges past expiry date or if components appear separated or discoloured.

HEALTH AND SAFETY

Signal word: DANGER. Refer to Safety Data Sheet (VEP-GIROD SDS v1.0) for full hazard and precautionary information.

- GHS pictograms: Corrosion (GHS05), Exclamation Mark (GHS07).
- Skin irritation (Cat. 2), Eye damage (Cat. 1), Skin sensitisation (Cat. 1).
- Wear protective gloves (nitrile or neoprene), chemical splash goggles, protective clothing.
- Use in well-ventilated areas. Avoid breathing dust/fume/vapours.
- If skin contact: wash with soap and water for 15 minutes.
- If eye contact: flush with clean water for 15 minutes. Seek immediate medical attention.
- Dispose of contents and container in accordance with local regulations.

For professional / industrial use only. Not for consumer retail.

DISCLAIMER

The technical data contained herein is based on manufacturer testing and field experience. It is offered as a guide and does not constitute a warranty or guarantee of performance in any specific application. Final suitability and acceptance are subject to project-specific engineering assessment. The user is responsible for verifying that this product meets the requirements of their particular application, including compliance with applicable codes and standards. Nautilus Innovation Pte Ltd accepts no liability for loss or damage arising from the use of this product outside the conditions described herein.

Venturer™ GIROD Structural Epoxy System | VEP-GIROD-450

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